CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
SAN FRANCISCO BAY REGION

ORDER NO. 95-014

SITE CLEANUP REQUIREMENTS FOR:

ALFRED C. AND MAY BALL, A.C. BALL COMPANY, AND
MENLO CASPIAN INVESTMENT COMPANY PARTNERS

FOR THE PROPERTY LOCATED AT:
141 CASPIAN COURT
SUNNYVALE, SANTA CLARA COUNTY

The California Regional Water Quality Control Board, San Francisco Bay Region (hereinafter called the Board), finds that:

SITE DESCRIPTION

1. Volatile organic compound (VOC) pollution is present in soil and groundwater at 141 Caspian Court in Sunnyvale.

2. Currently VOC concentrations in groundwater include tetrachloroethylene (PCE) to 24 parts per billion (ppb), trichloroethylene (TCE) to 120 ppb, 1,1,1-trichloroethane (1,1,1-TCA) to 3,000 ppb, 1,1-dichloroethylene (1,1-DCE) to 800 ppb, 1,1-dichloroethane (1,1-DCA) to 46 ppb, 1,2-dichloroethylene (1,2-DCE) to 35 ppb, and Freon-113 to 10 ppb. Figure 1 shows the total-VOC plume in the "A aquifer" as of June, 1994.

3. The site consists of a 3.61-acre lot with a single-story, 53,000-square-foot building, located in the Moffett Industrial Park area of Sunnyvale. The site is surrounded by other Moffett Industrial Park buildings.

4. The site is located in the vicinity of two industrial complexes: the Lockheed Missile and Space Company (LMSC) complex, built in the 1950s-1960s is about one-quarter mile west of the site; and the Moffett Naval Air Station (NAS) which dates back to the 1930s is about a mile from the site, just west of Lockheed.

5. The Sunnyvale Landfill and Water Pollution Control Plant, both dating back to the early 1900s, are about 200 and 300 yards north of the site.

6. Due west, the site is abutted by the Sunnyvale West Outfall Canal, an unlined storm drainage channel constructed by the Santa Clara Valley Water District in the late 1950s. Two other storm water channels are the unlined Moffett Field Channel and the unlined Lockheed Channel, which converge and discharge (via a pump station) into the West Outfall Canal.

SITE USE AND HISTORY

7. The site was purchased and developed from a large, open agricultural tract of land, for industrial use, in 1977 by Alfred and May Ball. The building was custom designed and constructed in 1978 for the A.C. Ball Company, a small Defense Department specialty contractor, owned and operated by Alfred and May Ball.

   As part of the building construction, two 1,500-gallon fiberglass holding tanks were installed beneath a concrete pad used as a plating area on the west side of the building. The tanks were used to temporarily hold wastewater collected from metal-cleaning operations.

8. The A.C. Ball Company occupied the site from 1977 to late 1982 when the company ceased operations for financial reasons. The property was sold in mid-1983 to the Menlo Development Company (Menlo Development), and immediately re-sold to the Menlo Caspian Investment Company Partners (Menlo Caspian), who are the current owners. Menlo Development, now called Courson/Stuhlmuller Ventures, became the property manager as part of the transaction.

9. The A.C. Ball Company operations, from February 1977 to October 1982, included steel and aluminum metal finishing, vapor degreasing, painting, welding, assembly, and testing. Chemicals used included alkaline detergent, zinc phosphate solution, alodine solution, 1,1,1-TCA, acetone, methyl ethyl ketone (MEK), toluene, xylene, freon, paint and lacquer thinners, and lubricating oils. The two 1,500-gal underground tanks (sumps) on the west side of the building collected wastewater draining from the "plating area" (refer to Figure 2). The wastewater included overflow from the metal finishing rinse tanks, washdown, and periodically spent phosphating or cleaning solutions.

10. ESL, Inc., an electronics firm and a subsidiary of TRW, entered into a lease agreement with Menlo Development and Menlo Caspian, and has occupied the site since September, 1983. All of ESL's Sunnyvale manufacturing operations are consolidated at the subject location (ESL Building O-1). This is one of about 20 ESL buildings in the general area. Current operations include a chemical laboratory, cleaning, fabrication, metal finishing aluminum (alodining), silk screening, painting, tumbling and de-burring, assembly, and testing. ESL reportedly vacated the site on or about November 1, 1994. Currently, the site is unoccupied.

11. Chemicals used and/or stored by ESL have included acids, bases, oxidizers, alkaline detergent, alodine solution, TCA, TCE, acetone, MEK, toluene, xylene, freon, paint and lacquer thinners, and lubricating oils.

    ESL stored the bulk of its raw-material and waste chemicals in a dedicated storage area located on the concrete pad on the west side of the building. Wastewaters are discharged into the sanitary sewer under a City sewer-use permit initially issued March 1985.

12. ESL reportedly did not learn of the existence of the two wastewater holding tanks (sumps) under the concrete pad until late 1984, and never used them. ESL at this time (1984) wanted Menlo Caspian to properly close the two underground tanks.

LITIGATION

13. Menlo Caspian, as a potentially responsible party, brought legal action against the A.C. Ball Co. (the Balls), another potentially responsible party, under CERCLA, in the U.S. District Court in 1990, claiming that the Balls declined to reimburse Menlo Caspian for any part of the costs of removing the underground tanks and contaminated soil and site investigation and cleanup.

14. The Court, in its Judgement of July 6, 1990, determined that the Balls and A.C. Ball Company were liable to Menlo Caspian for 70% of costs incurred in the removal of underground tanks and associated contaminated soil, 50 % of costs incurred in making site investigations, 70% of future necessary costs of response relative to the contamination caused by the leaking underground tanks, and 100% of future response costs relative to contamination in top soil, if any (but not contamination in groundwater), in the area of monitoring well 10A.

15. In a response to a request to dismiss the previous action in its entirety, the Court (January 21, 1993) stated that claims between the parties had been settled and directed that all previous Judgements, Orders, Findings of Fact and Conclusions of Law, including those of July 6, 1990, shall have no preclusive effect in any litigation or other proceedings, and vacated the Judgement.

16. The Dischargers entered into a Settlement Agreement, details of which have not been released. It has been reported that the Balls have assumed responsibility for all aspects of remediating contamination in the "A zone", defined as the interval from ground surface to a depth of 30 feet below ground surface. Contamination outside the "A zone" is to be addressed by Menlo Caspian.

17. On March 3, 1993, the Court reconsidered its previous action, and reinstated the vacated Judgement.

DISCHARGERS

17. The A.C. Ball Company is a Discharger because it occupied the building and property and conducted operations including use of the two underground tanks which caused the discharge of wastes to site soil and groundwater. Alfred C. and May Ball are Dischargers because they owned the company, property and building during the time that wastes were being discharged. Menlo Caspian Investment Company Partners are Dischargers because they are current owners of the site.

18. Courson/Stuhlmuller Ventures (formerly known as the Menlo Development Company) are not named as Dischargers because they reportedly re-sold the property and building to Menlo Caspian immediately upon obtaining ownership. ESL, Inc., a subsidiary of TRW, occupies the building and property and conducts business as an electronics firm and uses VOCs, but is not named a Discharger because available information does not conclusively indicate that ESL, Inc. should be named. The U.S. District Court, by a Conclusion of Law in a Judgement dated July 6, 1990, did imply that ESL was an operator (and Menlo Caspian an owner) of the property, building and underground tanks within the meaning of 42 U.S.C. Sections 9601 (20) and 9607 (a) (2).

19. In addition to the parties named in this Order, other parties may have contributed to contamination/pollution on the property. If additional information comes to light showing that any

party not currently named as a Discharger caused or permitted any waste to be discharged or deposited on the 141 Caspian Court site where it entered or could have entered into the waters of the State, the Board will consider adding that party's name to this Order.

SITE HYDROGEOLOGY AND REMEDIAL INVESTIGATIONS

20. The site is underlain by layers of low-permeability clays interspersed with lenses of higher permeability silty sands or sandy gravels, interpreted by the Dischargers to be buried stream channels. The interval from about 5 to 20 feet below ground surface represents the "A aquifer" at this site, and a similar geologic interval at about 50 feet below the surface represents the "B aquifer"; these are separated by 30 feet of very-low-permeability clay representing the "AB aquitard".

21. There are two well-defined sand/gravel units (buried stream channels) within the A aquifer on the west side of the building. The water table is about 8 feet below the surface. Shallow groundwater appears to be moving in a northwesterly direction.

22. Menlo Caspian initiated a preliminary site assessment in 1986; groundwater contamination was revealed after four monitoring wells were installed and sampled. In 1987 four more site monitoring wells were installed.

23. Environmental investigations of the site have continued and to-date more than 28 groundwater monitoring and/or extraction wells and numerous co-extraction wells and sparging wells/points have been installed.

24. Data of 1993 indicate that the VOC plume in the "A aquifer" extends off-site downgradient in a northward direction. Site work has identified a Tank Area Plume, and a Canal Plume (refer to Figures 1 and 3).

25. In February 1993 the Dischargers submitted a Site Assessment/Feasibility Study/Remedial Action Plan for the "A aquifer". The overall cleanup strategy concentrated on the area of the former underground tanks. The total mass of tank-related VOC contamination in the subsurface is estimated at about three gallons (30 pounds) by the Dischargers.

26. In June 1993 the Dischargers submitted a report, "Groundwater Screening Investigation: B Zone", for the property at 141 Caspian Court in Sunnyvale, and concluded that VOC-affected groundwater in the "B Zone" is limited in areal extent to close proximity to the location of one of the former underground liquid-waste-holding tanks (identified as Tank #1) and is not migrating off-site (refer to Figure 4).

REMEDIATION ACTIVITIES

27. The two underground tanks and some soil were removed in 1987.

28. The Dischargers installed 6 groundwater extraction wells and 21 co-extraction (groundwater and vapor) wells, a number of air-sparging wells/points, and piping and a treatment compound (refer to Figures 1 and 5) between September 1993 and February 1994.

29. Extracted groundwater and vapor are treated by use of carbon adsorption. Treated soil vapors are discharged to the atmosphere as permitted by the Bay Area Air Quality Management District. The treated groundwater effluent is discharged to the sanitary sewer as permitted by the City of Sunnyvale.

30. Early remediation activities have alternated between the Tank Area Plume and the Canal Plume.

31. The treatment system is rated for a maximum flow of 30 gpm with an expected average flow rate of about 15-20 gpm.

ADDITIONAL SITE CHARACTERIZATION WORK

32. The Dischargers are proposing to do additional work concerning the "A aquifer", including:

    a. Establish non-detection boundaries to the north, northeast and northwest of the site for VOCs associated with the Tank Area Plume and the Canal Plume (refer to Figure 6).

    b. Establish background VOC concentrations upgradient of the site.

    c. Further define the geologic stratigraphy in the vicinity of the site with emphasis on tracking the paths of two buried stream channels suspected to be present in the northwestern portion of the site.

    d. Submit a supplemental site characterization report, to augment the reports of 1993.

BASIN PLAN

33. The Board adopted a revised Water Quality Control Plan for the San Francisco Bay Region (Basin Plan) on December 16, 1991. The Basin Plan contains water quality objectives for South San Francisco Bay and contiguous surface waters and groundwater.

34. The existing and potential beneficial uses of the groundwater underlying and adjacent to the property, which is in the Santa Clara Valley Groundwater Basin, include:

    a. Industrial process water supply;
    b. Industrial service supply;
    c. Municipal and domestic supply; and,
    d. Agricultural supply.

CALIFORNIA ENVIRONMENTAL QUALITY ACT

35. The Dischargers have caused or permitted, and threaten to cause or permit, waste to be discharged or deposited where it is or probably will be discharged to waters of the State and creates or threatens to create a condition of pollution or nuisance.

36. This action is an Order to enforce the laws and regulations administered by the Board. This action is categorically exempt from the provisions of the CEQA pursuant to Section 15321 of the Resources Agency Guidelines.

NOTIFICATION AND MEETING

37. Pursuant to Section 13304 of the California Water Code the Dischargers are hereby notified that the Board is entitled to, and may seek reimbursement for, all reasonable costs actually incurred by the Board to investigate unauthorized discharges of waste and to oversee cleanup of such waste, abatement of the effects thereof, or other remedial action, required by this Order.

38. The Board has notified the Dischargers and interested agencies and persons of its intent under California Water Code Section 13304 to prescribe Site Cleanup Requirements for the discharge and has provided them with the opportunity for a public hearing and an opportunity to submit their written views and recommendations.

39. The Board, in a public meeting, heard and considered all comments pertaining to the discharge.

IT IS HEREBY ORDERED, pursuant to Section 13304 of the California Water Code, that the Dischargers shall cleanup and abate the effects described in the above Findings as follows:

A. PROHIBITIONS

1. The discharge of wastes or hazardous materials in a manner which will degrade water quality or adversely affect the beneficial uses of waters of the State is prohibited.

2. Further significant migration of pollutants through subsurface transport to waters of the State is prohibited.

3. Activities associated with the subsurface investigation and cleanup which will cause significant adverse migration of pollutants are prohibited.

B. SPECIFICATIONS

1. The storage, handling, treatment or disposal of polluted soil or groundwater shall not create a nuisance as defined in Section 13050 (m) of the California Water Code.

2. The Dischargers shall conduct further reporting, site investigation and monitoring activities as needed and as described in this Order. Results of such monitoring activities shall be submitted to the Board. Should monitoring results show evidence of plume migration, additional plume characterization may be required.

3. Final cleanup standards for polluted groundwater shall be in accordance with State Water Resources Control Board Resolution No. 68-16, "Statement of Policy with Respect to Maintaining High Quality Waters in California" (meaning, re-establish background water quality to the extent feasible). If background quality cannot be restored, cleanup standards or objectives shall be the best quality which is reasonable, but shall not be set at numerical limits which are above the State of California drinking water maximum contaminant levels (MCLs) or action levels, whichever are more stringent. Alternate final cleanup levels (standards) may be proposed, based upon a Discharger-developed feasibility study of cleanup alternatives that compares effectiveness, cost, time to achieve

cleanup, and a risk assessment to determine impacts on beneficial uses, human health and the environment.

4. The cleanup standard for source-area soils is 1 ppm (part per million) for total VOCs. Soil cleanup standards may be modified by the Board if the Dischargers demonstrate with site specific data that higher concentrations of VOCs in the soil will not threaten the quality of waters of the State or that cleanup to these standards is infeasible and human health and the environment are protected.

5. The Dischargers shall optimize, with a goal of 100%, the reclamation or reuse of groundwater extracted as a result of cleanup activities. The Dischargers shall not be found in violation of this Order if documented factors beyond the Dischargers' control prevent the Dischargers from attaining this goal, provided the Dischargers have made a good faith effort to attain this goal.

C. PROVISIONS

1. The Dischargers shall be liable, pursuant to Section 13304 of the California Water Code, to the Board for all reasonable costs actually incurred by the Board to investigate unauthorized discharges of waste and to oversee cleanup of such waste, abatement of the effects thereof, or other remedial action, required by this Order. If the site addressed by this Order is enrolled in a State Board-managed reimbursement program, reimbursement shall be made pursuant to this Order and according to procedures established in that program. Any disputes raised by the Dischargers over the reimbursement amounts or methods used in that program shall be consistent with the dispute resolution procedures of that program.

2. The Dischargers shall perform all investigation and remedial work in accordance with the requirements of this Order.

3. The Dischargers shall submit to the Board acceptable monitoring program reports containing results of work performed according to a program prescribed by the Board's Executive Officer.

4. The Dischargers shall comply with all Prohibitions and Specifications of this Order, in accordance with the following time schedule and tasks:

   a. INTERIM REMEDIAL ACTIONS

      1) TASK 1: VOC PLUME CHARACTERIZATION. Submit a technical report acceptable to the Executive Officer which defines and delineates the lateral and vertical extent of pollutant plume(s) identified by site investigations; and identifies all volatile organic compounds and other chemicals detected, characterized as carcinogens or non-carcinogens, by depth below the surface and depth interval of occurrence. This report shall include tabulated data of chemical concentrations and iso-concentration contour maps, illustrate the methodology used to calculate the pounds of chemicals being removed and tabulate amounts of

groundwater extracted and chemicals removed by groundwater and vapor extraction, and chemicals remaining in soil and groundwater.

This report shall include documentation to show that pollutant plumes are adequately defined, or a proposal for additional plume characterization; and shall document any contention that site pollution may be due in part to groundwater migration from off-site source(s). This report may include the supplemental site characterization report alluded to in Finding 32.

COMPLETION DATE: May 1, 1995

2) TASK 2: POLLUTANT-PLUME CONTAINMENT. Submit a technical report acceptable to the Executive Officer which proposes monitoring the status of pollutant-plume containment in the "A aquifer" and plume containment or pollutant distribution in the "B aquifer". This report shall include the names and locations of all monitoring wells to be utilized in a groundwater monitoring program, and may involve both existing wells and projected (proposed) wells. Boring and completion logs for all existing wells to be incorporated into the monitoring program shall be included as part of the report.

COMPLETION DATE: June 1, 1995

3) TASK 3: IMPLEMENTATION OF MONITORING PROGRAM. Submit a technical report acceptable to the Executive Officer which shows that a viable groundwater monitoring program has been implemented. This report shall include boring and completion logs for all wells not previously submitted.

COMPLETION DATE: June 15, 1995

4) TASK 4: GROUNDWATER CONSERVATION. If the discharge of extracted groundwater to the sanitary sewer system is to be discontinued, the Dischargers shall, at least 90 days prior to such discontinuance, submit a technical report acceptable to the Executive Officer which evaluates other options for the disposal or reclamation of extracted groundwater, in compliance with Board Resolution No. 88-160, "Regional Board Position on the Disposal of Extracted Groundwater from Groundwater Cleanup Projects".

COMPLETION DATE: 90 days prior to termination of discharge to sanitary sewer

5) TASK 5: CONDUIT INVESTIGATION AND EXPOSURE THREAT. Submit a technical report acceptable to the Executive Officer which shows that the existing soil and groundwater pollution does not pose an immediate or potential threat to occupants of the subject or adjacent

property or that any potential threat has been or is being mitigated, and exposure to VOCs by groundwater ingestion, inhalation, or dermal contact is not probable. This report shall include an investigation of potential conduits from polluted shallow water-bearing units in the "A and B aquifers" to deeper "clean" sources of potential potable water supplies.

COMPLETION DATE: July 10, 1995

6) TASK 6: COMPLETE IMPLEMENTATION OF INTERIM REMEDIAL ACTIONS FOR SOIL AND GROUNDWATER POLLUTION. Submit a technical report acceptable to the Executive Officer which documents completion of the implementation of interim remedial actions for soil and groundwater pollution.

COMPLETION DATE: February 1, 1996

7) TASK 7: EVALUATE INTERIM REMEDIAL ACTIONS. Submit a technical report acceptable to the Executive Officer which evaluates the interim soil and groundwater remediation actions and makes recommendations for any proposed or necessary modifications. This report shall address any suspected off-site sources of VOC pollution, and attempt to document any source(s) of pollution not previously identified. The reports of Tasks 6 and 7 may be combined and submitted as one document.

COMPLETION DATE: February 1, 1996

8) TASK 8: IMPLEMENTATION OF PROPOSED MODIFICATIONS. Submit a report acceptable to the Executive Officer which documents that any modifications proposed in Task 7, as accepted by the Executive Officer, have been implemented and completed by the Dischargers and are in effect.

COMPLETION DATE: April 1, 1996

b. FINAL CLEANUP PLANS AND ACTIONS

1) TASK 9: PROPOSED FINAL CLEANUP PLAN. Submit a technical report acceptable to the Executive Officer which proposes a final cleanup plan for the site. This report shall contain the results of site investigations, an evaluation of the installed interim remedial actions, a feasibility study evaluating alternative final remedial actions, the recommended actions necessary to achieve final cleanup, and the tasks and time schedule necessary to implement the recommended final remedial actions. The reports of Tasks 8 and 9 may be combined and submitted as one document.

COMPLETION DATE: April 1, 1996

2) TASK 10: COMPLETE IMPLEMENTATION OF FINAL CLEANUP PLAN AND ACTIONS. Submit a technical report acceptable to the Executive Officer documenting the implementation of the final cleanup plan and actions as proposed and accepted by the Executive Officer pursuant to Task 9.

COMPLETION DATE: June 1, 1996

c. STATUS REPORT

1) TASK 11: STATUS REPORT AND EFFECTIVENESS EVALUATION. Submit a technical report acceptable to the Executive Officer containing the following: (1) results of any additional investigative work needed; (2) an evaluation of the effectiveness of installed final cleanup measures and cleanup costs; (3) additional recommended measures to achieve final cleanup objectives and goals, if necessary; (4) a comparison of previous expected costs with the costs incurred and projected costs necessary to achieve cleanup objectives and goals; (5) the tasks and time schedule necessary to implement any additional final cleanup measures; and (6) recommended measures for reducing Board oversight. This report shall also describe the reuse of extracted groundwater, evaluate and document the removal and/or cleanup of polluted soil. If safe drinking water levels have not been achieved and are not expected to be achieved through continued groundwater extraction and/or soil cleanup, this report shall also contain an evaluation of the feasibility of achieving drinking water quality with the implemented cleanup measures and a proposal for alternative measures if required to achieve drinking water quality.

COMPLETION DATE: February 1, 2000

5. If the Dischargers are delayed, interrupted or prevented from meeting one or more of the completion dates specified in this Order, the Dischargers shall promptly notify the Executive Officer. In the event of such delays, the Board may consider modification of the task completion dates established in this Order.

6. The Dischargers shall submit quarterly technical reports commencing with the First Quarter 1995 quarterly report due May 15, 1995. The quarterly technical report shall include but need not be limited to, all information required to be submitted by the Self-Monitoring Program on a quarterly basis for this site. This requirement may be modified by the Executive Officer upon request by the Dischargers and submittal of information to demonstrate that a modification is appropriate.

7. On an annual basis, a technical report on the progress of compliance with all requirements of this Order shall be submitted, commencing with the report for 1995, due February 15, 1996. The annual report may be combined with other technical report(s) which are due to be submitted on February 15, 1996. The progress report shall include,

but need not be limited to: information required to be submitted by the Self-Monitoring Program on an annual basis; updated water table/piezometric surface contour maps, pollutant concentration contour maps for all affected water-bearing zones, and base map(s) showing locations of all properly identified monitoring and extraction wells and identifying adjacent facilities and structures; and an evaluation of the effectiveness of the cleanup actions/systems and the feasibility of attaining groundwater and soil cleanup goals.

8. All hydrogeological plans, specifications, reports and documents shall be signed by and/or stamped with the seal of a certified engineering geologist certified pursuant to Section 7842 of the California Business and Professions Code, or a registered geologist registered pursuant to section 7850 of the California Business and Professions Code, or a registered civil engineer registered pursuant to Section 6762 of the California Business and Professions Code.

9. All samples shall be analyzed by State certified laboratories or laboratories accepted by the Board using approved EPA methods for the type of analysis to be performed. All laboratories shall maintain quality assurance/quality control records for Board review.

10. The Dischargers shall maintain in good working order, and operate as efficiently as possible, any facility or control system installed to achieve compliance with the requirements of this Order.

11. Copies of all correspondence, reports, and documents pertaining to compliance with the Prohibitions, Specifications, and Provisions of this Order shall be provided to the following agencies:

    a. Santa Clara Valley Water District
    b. Santa Clara County Health Department
    c. City of Sunnyvale
    d. State Department of Health Services/DTSC

    The Executive Officer may require additional copies to be provided to the U.S. Environmental Protection Agency, Region IX, and to a local repository for public use.

12. The Dischargers shall permit the Board or its authorized representative, in accordance with Section 13267 (c) of the California Water Code:

    a. Entry upon Dischargers' premises in which any pollution sources exist, or may potentially exist, or in which any required records are kept, which are relevant to this Order.

    b. Access to copy any records required to be kept under the terms and conditions of this Order.

    c. Inspection of any monitoring equipment or methodology implemented in response to this Order.

d. Sampling of any groundwater or soil which is accessible, or may become accessible, as part of any investigation or remedial action program undertaken by the Dischargers.

13. The Dischargers shall file a report on any changes in site occupancy, ownership and/or property use including redevelopment associated with the facility described in this Order, within 15 days of each occurrence. If redevelopment is proposed, notice to the Board shall be made when a final plan is adopted or accepted by the property owners.

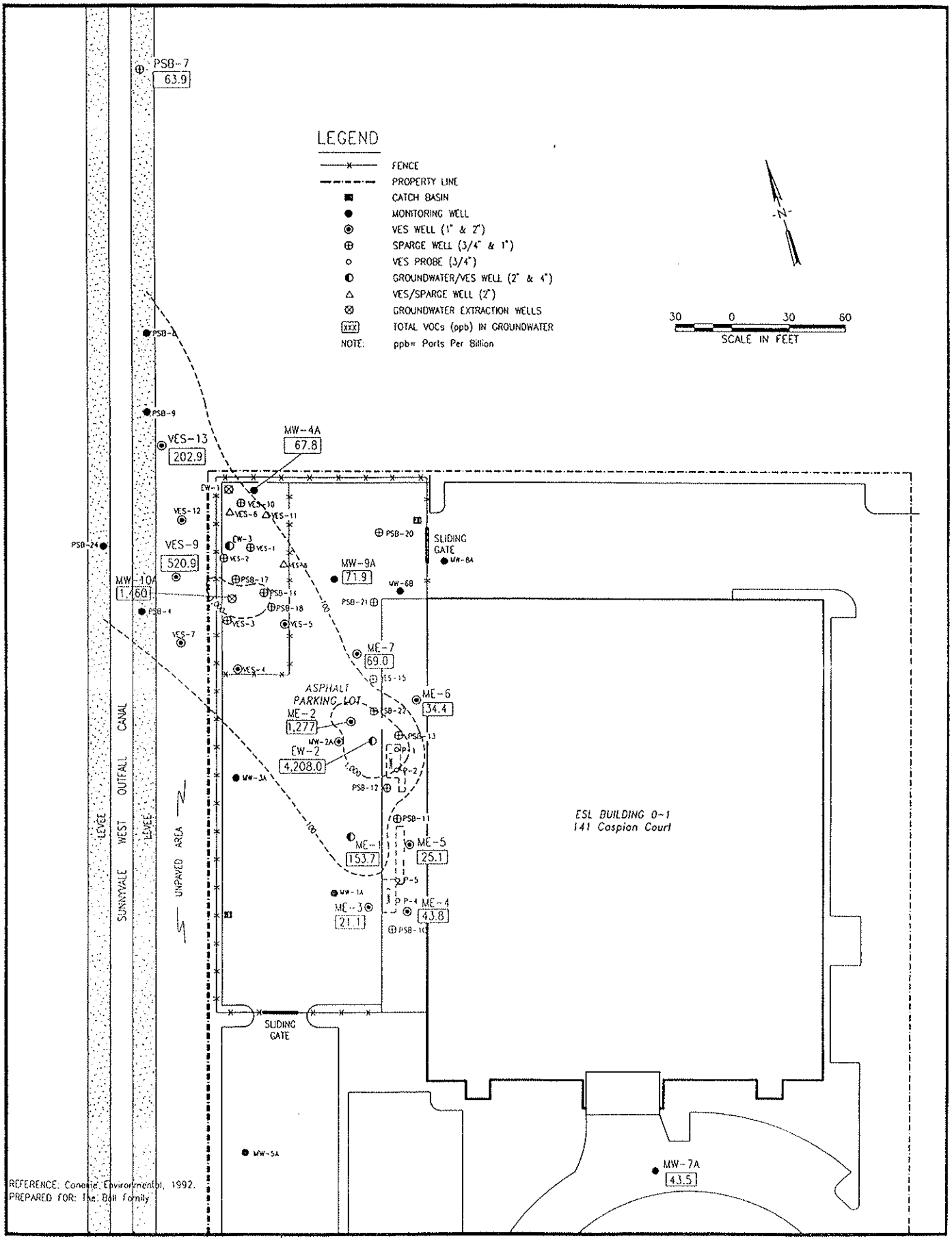
14. If any hazardous substance is discharged in or on any waters of the State, or discharged and deposited where it is, or probably will be discharged in or on any waters of the State, the Dischargers shall report such a discharge to the Board, at (510) 286-1255 on weekdays during office hours from 8 a.m. to 5 p.m., and to the Office of Emergency Services at (800) 852-7550 during non-office hours. A written report shall be filed with the Board within five (5) working days and shall contain information relative to: the nature of the waste or pollutant, quantity involved, duration of incident, cause of spill, Spill Prevention, Control and Countermeasure Plan (SPCC) in effect, if any, estimated size of affected area, nature of effects, corrective measures that have been taken or planned, and a schedule of these activities, and persons notified.

15. The Board will review this Order periodically and may revise the requirements when necessary.

I, Steven R. Ritchie, Executive Officer, do hereby certify that the foregoing is a full, true and correct copy of an Order adopted by the California Regional Water Quality Control Board, San Francisco Bay Region, on January 18, 1995.

Steven R. Ritchie
Executive Officer

Figure 1: Total VOCs in Groundwater, "A Aquifer"
Figure 2: A.C. Ball Chemical Handling and Storage Areas
Figure 3: Total VOCs "A Aquifer", Extended Site Map
Figure 4: Groundwater Quality, "B Zone"
Figure 5: Trenching and Piping Layout
Figure 6: Proposed Sample Locations



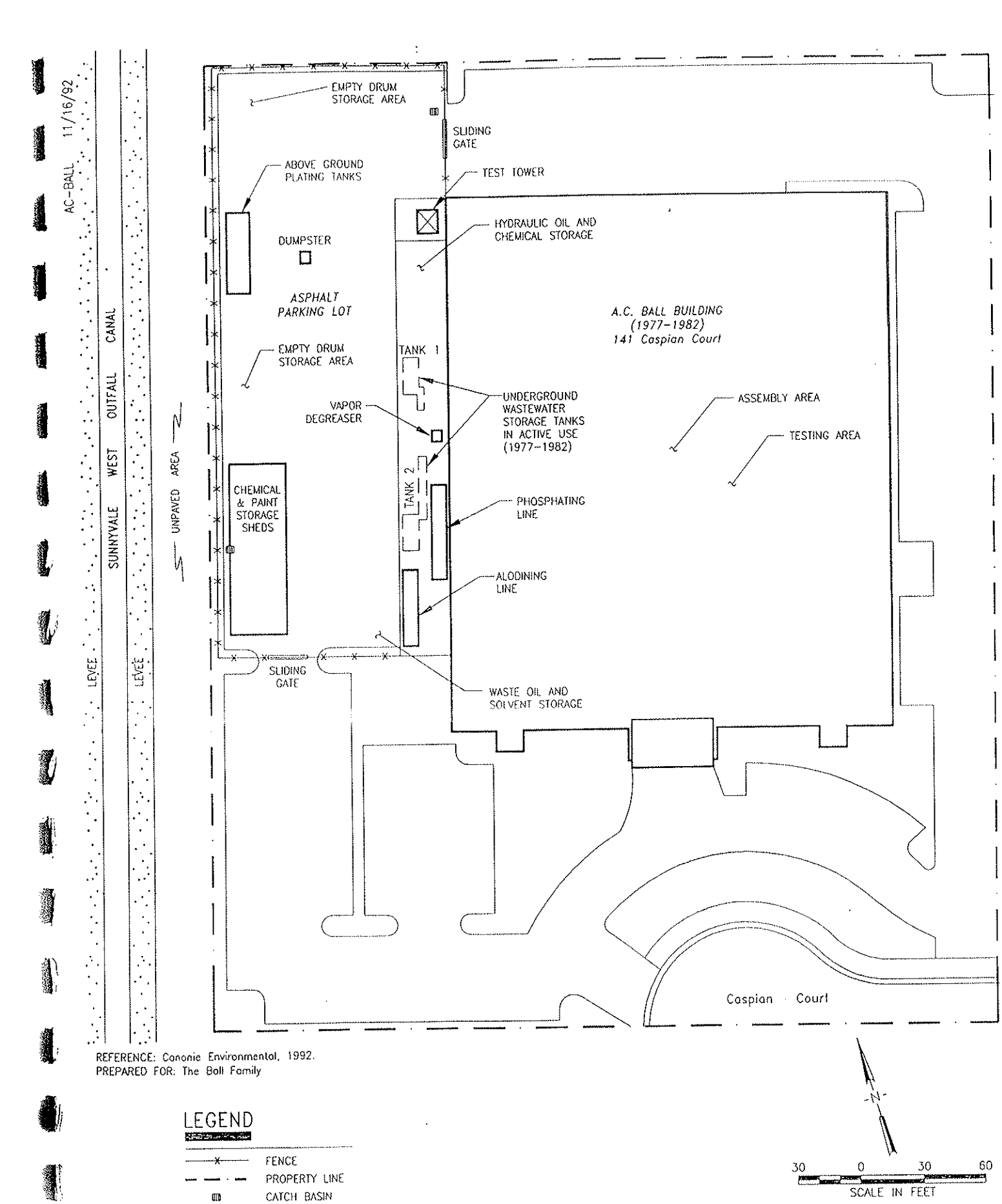
REFERENCE: Canonie Environmental, 1992.
PREPARED FOR: The Boh Family

TOTAL VOCs (ppb) IN GROUNDWATER
A AQUIFER 20 June 1994
141 Caspian Court
Sunnyvale, California

Figure 1

RRM
Remediation Risk Management, Inc.

CE22-210/8-23-94



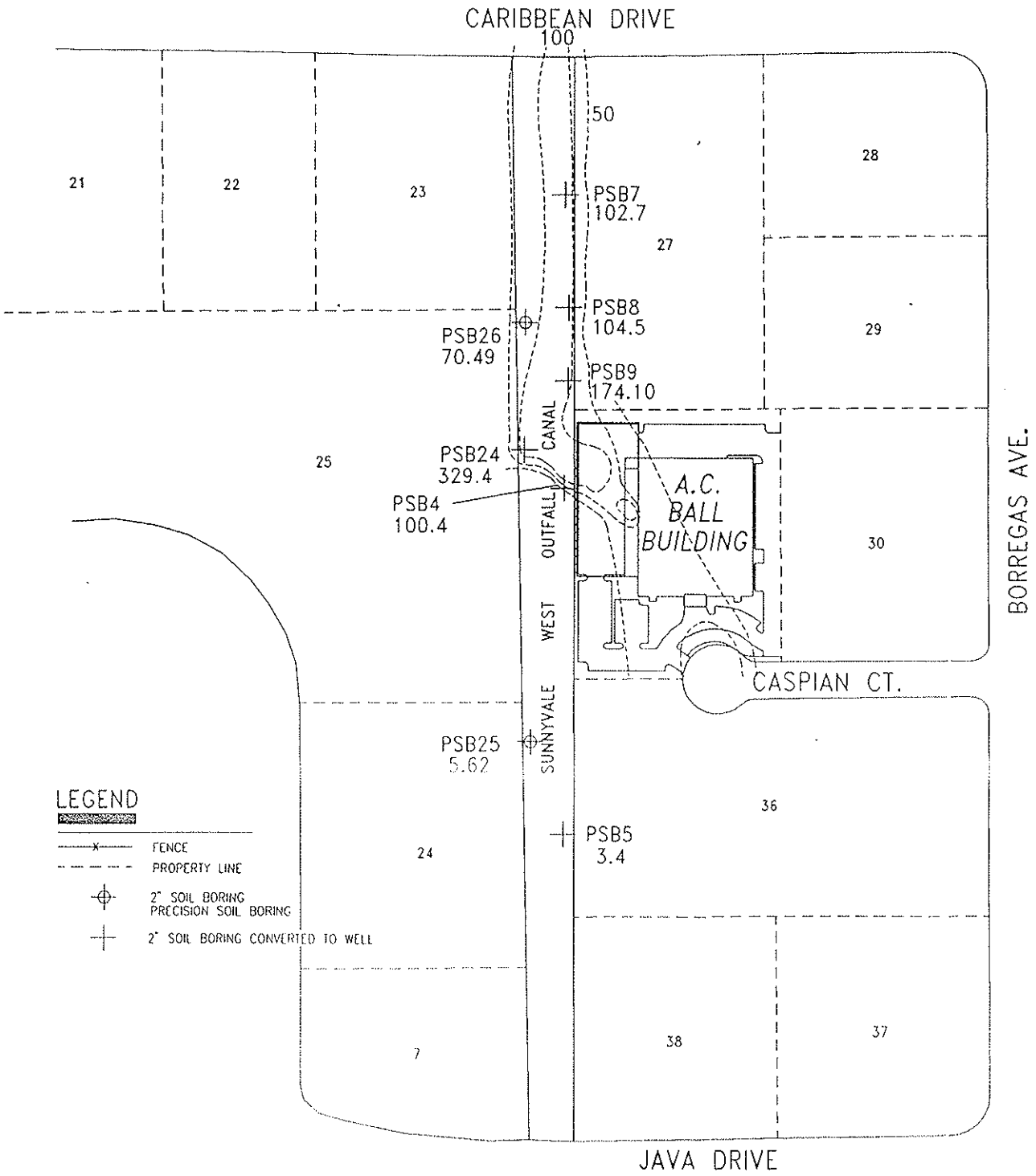
A.C. BALL CHEMICAL HANDLING AND STORAGE AREAS

141 Caspian Court
Sunnyvale, CA

EVAX TECHNOLOGIES, INC.

Figure 2

City Sunnyvale
Land Fill



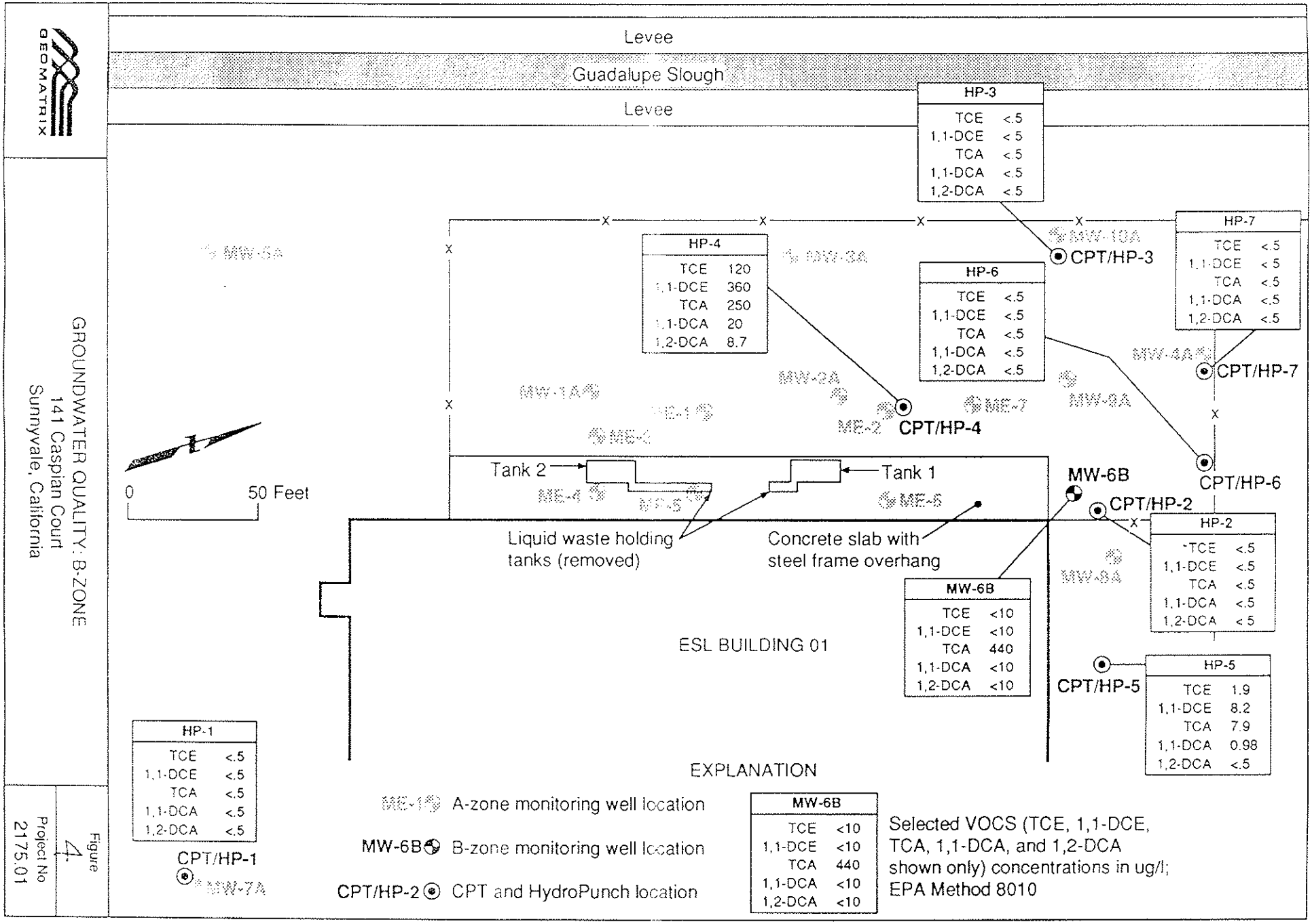
TOTAL VOC'S IN THE "A" AQUIFER-AUGUST 1993
EXTENDED SITE MAP

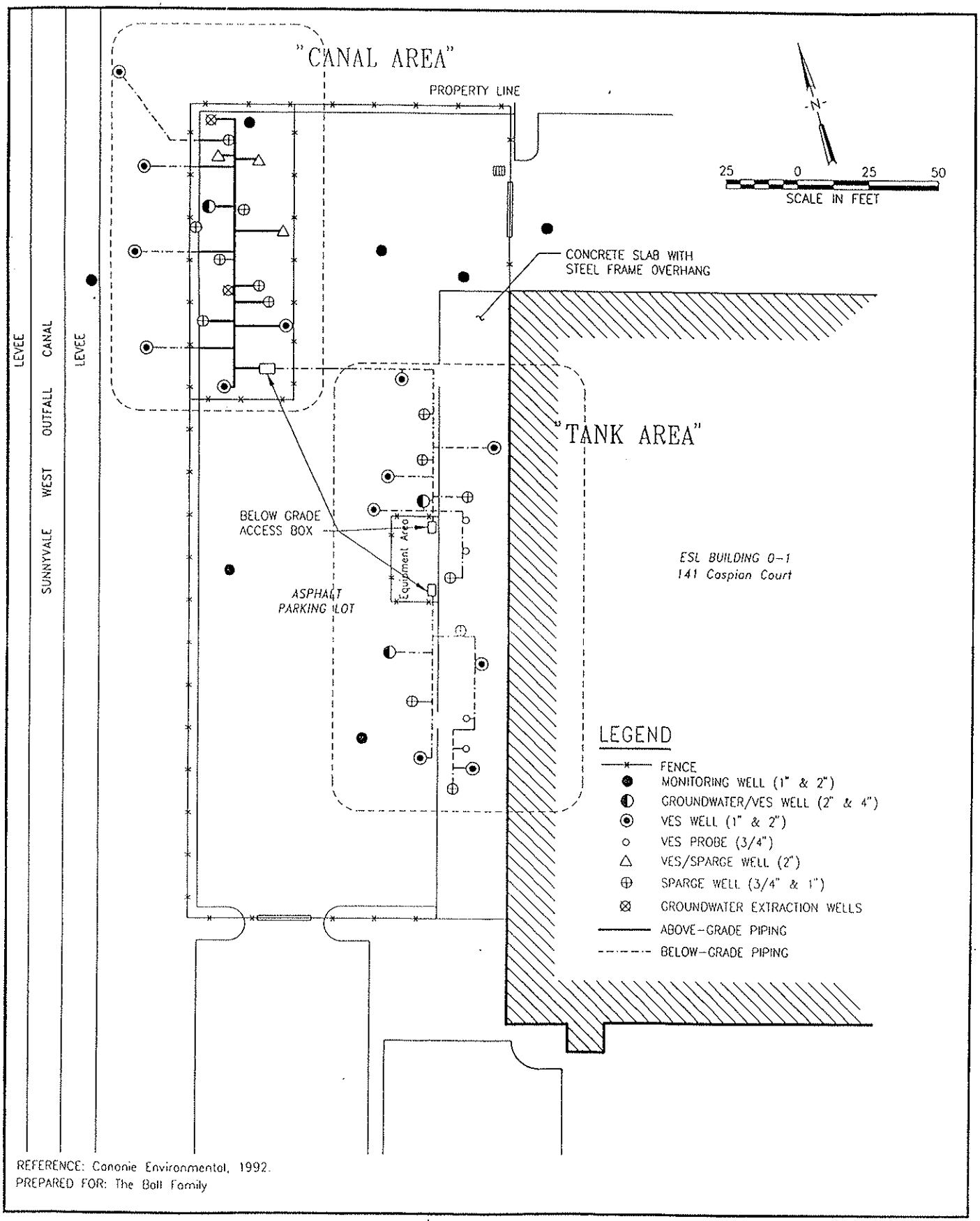
RRM
Remediation Risk Management, Inc.

141 Caspian Court
Sunnyvale, CA

Figure 3

ACBAL107 / 10-20-93


GEOMATRIX
GROUNDWATER QUALITY: B-ZONE
141 Caspian Court
Sunnyvale, California
Project No 2175.01
Figure 4
Levee
Guadalupe Slough
Levee
HP-3
TCE <.5
1,1-DCE <.5
TCA <.5
1,1-DCA <.5
1,2-DCA <.5
HP-4
TCE 120
1,1-DCE 360
TCA 250
1,1-DCA 20
1,2-DCA 8.7
HP-6
TCE <.5
1,1-DCE <.5
TCA <.5
1,1-DCA <.5
1,2-DCA <.5
HP-7
TCE <.5
1,1-DCE <.5
TCA <.5
1,1-DCA <.5
1,2-DCA <.5
MW-5A
MW-3A
MW-10A
CPT/HP-3
MW-4A
CPT/HP-7
MW-1A
ME-1
MW-2A
ME-2
CPT/HP-4
ME-7
MW-8A
ME-3
CPT/HP-6
0
50 Feet
Tank 2
Tank 1
ME-4
ME-5
MW-6B
CPT/HP-2
Liquid waste holding tanks (removed)
Concrete slab with steel frame overhang
MW-9A
HP-2
TCE <.5
1,1-DCE <.5
TCA <.5
1,1-DCA <.5
1,2-DCA <.5
MW-6B
TCE <10
1,1-DCE <10
TCA 440
1,1-DCA <10
1,2-DCA <10
ESL BUILDING 01
CPT/HP-5
HP-5
TCE 1.9
1,1-DCE 8.2
TCA 7.9
1,1-DCA 0.98
1,2-DCA <.5
HP-1
TCE <.5
1,1-DCE <.5
TCA <.5
1,1-DCA <.5
1,2-DCA <.5
CPT/HP-1
MW-7A
EXPLANATION
ME-1 A-zone monitoring well location
MW-6B B-zone monitoring well location
CPT/HP-2 CPT and HydroPunch location
MW-6B
TCE <10
1,1-DCE <10
TCA 440
1,1-DCA <10
1,2-DCA <10
Selected VOCS (TCE, 1,1-DCE, TCA, 1,1-DCA, and 1,2-DCA shown only) concentrations in ug/l; EPA Method 8010



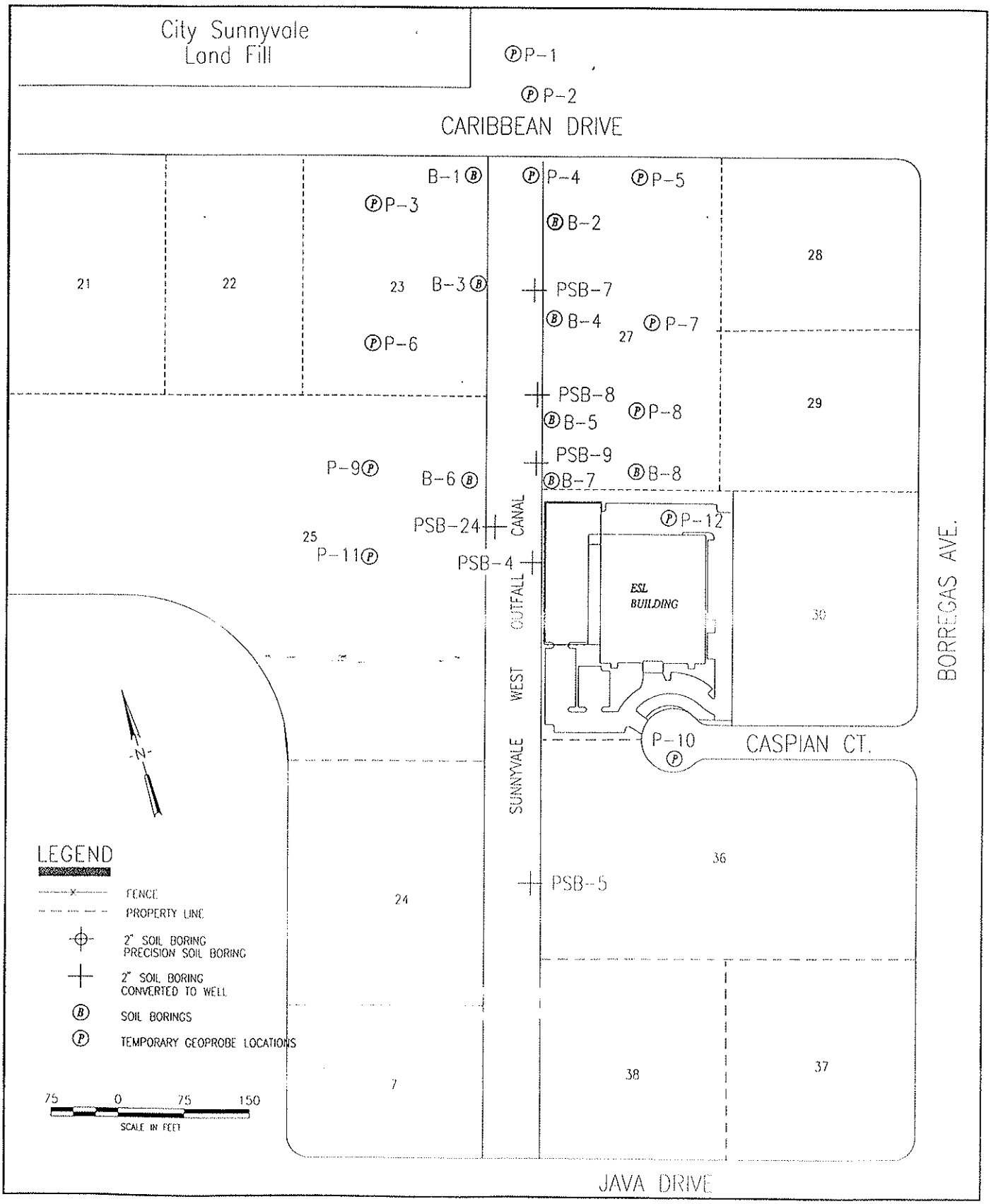
REFERENCE: Cononie Environmental, 1992.
PREPARED FOR: The Ball Family

RRM
Remediation Risk Management, Inc.

TRENCHING AND PIPING LAYOUT
141 Caspian Court
Sunnyvale, California

FIGURE 5

CE22-206/8-23-94



RRM
Remediation Risk Management, Inc.

PROPOSED SAMPLE LOCATIONS
141 Caspian Court
Sunnyvale, California

Figure 6

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
SAN FRANCISCO BAY REGION

SELF-MONITORING PROGRAM

FOR

ALFRED C. BALL AND MAY BALL, A.C. BALL COMPANY,

AND

MENLO CASPIAN INVESTMENT COMPANY PARTNERS

FOR THE PROPERTY LOCATED AT 141 CASPIAN COURT

SUNNYVALE, SANTA CLARA COUNTY

SITE CLEANUP REQUIREMENTS

ORDER NO. 95-014

CONSISTS OF

PART A

AND

PART B

PART A

A. General

1. Reporting responsibilities of waste Dischargers are specified in Sections 13225(a), 13267(b), 13383, and 13387(b) of the California Water Code and this Regional Board's Resolution No.73-16.

2. The principal purposes of a self-monitoring program by a waste Discharger are the following:

   a. To document compliance with Site Cleanup Requirements and prohibitions established by the Board;

   b. To facilitate self-policing by the waste Discharger in the prevention and abatement of pollution arising from waste discharge;

   c. To develop or assist in the development of standards of performance, toxicity standards and other standards; and,

   d. To prepare water and wastewater quality inventories.

B. Sampling And Analytical Methods

1. Sample collection, storage, and analyses shall be performed according to the most recent version of Standard Methods for the Analysis of Wastewater, and Test Methods for Evaluating Solid Waste EPA Document SW-846, or other EPA approved methods and in accordance with an approved sampling and analysis plan.

2. Water and waste analysis (except total suspended solids) shall be performed by a laboratory approved for these analyses by the State Department of Health. The director of the laboratory whose name appears on the certification shall supervise all analytical work in his/her laboratory and shall sign all reports of such work submitted to the Regional Board.

3. All monitoring instruments and equipment shall be properly calibrated and maintained to ensure accuracy of measurements.

C. Definition Of Terms

1. A grab sample is a discrete sample collected at any time.

2. Duly authorized representative is a duly authorized representative may thus be either a named individual or any individual occupying a named position such as the following:

a. Authorization is made in writing by a principal executive officer; or,

b. Authorization specifies either an individual or a position having responsibility for the overall operation of the regulated facility or activity, such as general partner in a partnership, sole proprietor in a sole proprietorship, the position of plant manager, operator of a well or a well field, superintendent, position of equivalent responsibility, or an individual or position having overall responsibility for environmental matters for the company.

D. Schedule Of Sampling, Analysis, And Observations

1. The Discharger is required to perform sampling, analysis, and observations according to the schedule specified in Part B.

E. Records To Be Maintained By The Discharger

1. Written reports shall be maintained by the Discharger for ground water monitoring and wastewater sampling, and shall be retained for a minimum of three years. This period of retention shall be extended during the course of any unresolved litigation regarding this discharge or when requested by the Board. Such records shall show the following for each sample:

a. Identity of sample and sample station number;
b. Date and time of sampling;
c. Date and time that analyses are started and completed, and name of the personnel performing the analyses;
d. Complete procedure used, including method of preserving the sample, and the identity and volumes of reagents used. A reference to a specific section of a reference required in Part A Section B is satisfactory;
e. Calculation of results;
f. Results of analyses, and detection limits for each analyses; and,
g. Chain of custody forms for each sample.

F. Reports To Be Filed With The Board

1. Groundwater monitoring results shall be filed quarterly, unless a different schedule is adopted by the Board and/or Executive Officer. Written self-monitoring reports shall be filed no later than 45 calendar days following the end of the report period. In addition an annual report shall be filed if and as indicated. The reports shall be comprised of the following:

a. Letter of Transmittal - A letter transmitting the essential points in each self-monitoring report should accompany each report. Such a letter shall include a discussion of any requirement violations found during the last report period, and actions taken or planned for correcting the violations, such as, operation and/or facilities modifications. If the Discharger has previously submitted a

detailed time schedule for correcting requirement violations, a reference to the correspondence transmitting such schedule will be satisfactory. If no violations have occurred in the last report period this shall be stated in the letter of transmittal. Monitoring reports and the letter transmitting the monitoring reports shall be signed by a principal executive officer at the level of vice president or his duly authorized representative, if such representative is responsible for the overall operation of the facility from which the discharge originates. The letter shall contain a statement by the official, under penalty of perjury, that to the best of the signer's knowledge the report is true, complete, and correct. The letter shall contain the following certification:

"I certify under penalty of law that this document and all attachments are prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who managed the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations."

b. Each monitoring report shall include a compliance evaluation summary sheet. Until the Order's amended to specify ground water protection standards, the following shall apply and the compliance sheet shall contain:

   i. The method and time of water level measurement, the type of pump used for purging, pump placement in the well, method of purging, pumping rate, equipment and methods used to monitor field pH, temperature, and conductivity during purging, calibration of the field equipment, results of the pH, temperature conductivity and turbidity testing, well recovery time, and method of disposing of the purge water; and,

   ii. Type of pump used, pump placement for sampling, a detailed description of the sampling procedure; number and description of equipment, field and travel blanks; number and description of duplicate samples; type of sample containers and preservatives used, the date and time of sampling, the name and qualifications of the person actually taking the samples, and any other observations; the chain of custody record.

c. A summary of the status of any remediation work performed during the reporting period. This shall be a brief and concise summary of the work initiated and completed as follows:

   i. As interim corrective action measures; and,

   ii. To define the extent and rate of migrations of waste constituents in the soil and ground water at the site.

d. The Discharger shall describe, in the quarterly or periodic report, the reasons for significant increases in a pollutant concentration at a well onsite. The description shall include the following:

   i. The source of the increase;

   ii. How the Discharger determined or will investigate the source of the increase; and,

   iii. What source removal measures have been completed or will be proposed.

e. A map or aerial photograph showing observation and monitoring station locations, and plume contours for each chemical in each aquifer shall be included as part of the quarterly Self-Monitoring Report.

f. Laboratory statements of results of analyses specified in Part B must be included in each report. The director of the laboratory whose name appears on the laboratory certification shall supervise all analytical work in his/her laboratory and shall sign all reports of such work submitted to the Board. The following information shall be provided:

   i. The methods of analyses and detection limits must be appropriate for the expected concentrations. Specific methods of analyses must be identified. If methods other than EPA approved methods or Standard Methods are used, the exact methodology must be submitted for review; and,

   ii. In addition to the results of the analyses, laboratory quality control/quality assurance (QA/QC) information must be included in the monitoring report. The laboratory QA/QC information should include the method, equipment and analytical detection limits; the recovery rates; an explanation for any recovery rate that is less than 80%; the results of equipment and method blanks; the results of spiked and surrogate samples; the frequency of quality control analysis; and the name and qualifications of the person(s) performing the analyses.

g. By February 15 of each year the Discharger shall submit an annual report to the Board covering the previous calendar year. This report shall contain:

   i. Tabular and graphical summaries of the monitoring data obtained during the previous year;

   ii. A comprehensive discussion of the compliance record, and the corrective actions taken or planned which may be needed to bring the Discharger into full compliance with the Site Cleanup Requirements; and,

iii. A written summary of the ground water analyses indicating any change in the quality of the ground water.

G. In the event the Discharger violates or threatens to violate the conditions of the Site Cleanup Requirements and prohibitions or intends to experience a plant bypass or treatment unit bypass due to:

1. Maintenance work, power failures, or breakdown of waste treatment equipment, or;
2. Accidents caused by human error or negligence, or;
3. Other causes, such as acts of nature.

The Discharger shall notify the Regional Board office by telephone as soon as he or his agents have knowledge of the incident and confirm this notification in writing within 7 working days of the telephone notification. The written report shall include time and date, duration and estimated volume of waste bypassed, method used in estimating volume and person notified of the incident. The report shall include pertinent information explaining reasons for the noncompliance and shall indicate what steps were taken to prevent the problem from recurring.

In addition, the waste Discharger shall promptly accelerate his monitoring program to analyze the discharge at least once every day. Such daily analyses shall continue until such time as the effluent limits have been attained, until bypassing stops or until such time as the Executive Officer determines to be appropriate. The results of such monitoring shall be included in the regular Self-Monitoring Report.

Part B

A. Description Of Observation Stations And Schedule Of Observations

1. The observation stations shall consist of monitoring wells:

MW-1A, MW-2A, MW-3A, MW-4A, MW-5A, MW-7A, MW-8A, MW-9A, MW-10A, and MW-6B

and any other groundwater/vapor wells/points/probes selected from those existing or added during the soil and groundwater characterization or the evaluation of remediation work.

2. The schedule of groundwater observations and grab sampling shall be conducted quarterly during the months of January, April, July and October.

B. Observations and Test Procedures

1. The groundwater observations for all wells, and points/probes as may be appropriate, shall consist of the following:

a. Water elevation reported to the nearest 0.01 foot for both depth to water from the ground surface and the elevation of the groundwater level;

b. Groundwater temperature measured at the time of sampling and reported in degrees Fahrenheit;

c. Groundwater conductivity measured at the time of sampling as per Standard Methods 205 using potentiometric methodology;

d. Groundwater pH measured at the time of sampling as per Standard Methods 423 using potentiometric methodology; and,

e. Groundwater turbidity measured at the time of sampling.

2. The test procedures for the groundwater samples taken from all wells/points/probes shall be as described herein:

a. Volatile organic compounds by EPA Method 8010 or an equivalent EPA Method.

b. Detection limits shall be adequate for determining compliance with cleanup standards.

I, Steven R. Ritchie, Executive Officer, hereby certify that the foregoing Self-Monitoring Program is as follows:

1. Developed in accordance with the procedures set forth in this Board's Resolution No. 73-16;

2. Effective on the date shown below; and,

3. May be reviewed or modified at any time subsequent to the effective date, upon written notice from the Executive Officer, or request from the Discharger.

Steven R. Ritchie
Executive Officer

January 18, 1995
Date Ordered